



THE

JACG NEWSLETTER

JACG

THE JERSEY ATARI COMPUTER GROUP

\$2.00

VOLUME 8 NUMBER 5

BBS : 201-298-0161

JULY 1988

FROM THE EDITOR'S DESK

NEWSLETTER CONTEST

John Dean, Dave Dvorin, Don Forbes, Ray Golowach, Mary Russomano, and Neil Van Oost. all submitted articles which appear (for the memberships' judgement) in this months issue. I thank them for their contributions.

RUMOR

Rumor has it that ST marketing and distribution has all but ceased here in the U.S. If this is so, it simply reinforces what many of us have felt for a long time...that is, ATARI marketing strategy leaves a lot to be desired; it ranks (tied for last place) with ATARI user support! ATARI has never worked hard at shedding the "game machine" image, and in fact, the introduction of the XE Game Machine, has only perpetuated the image. Such a shame! My 70 year old father just bought an ATARI 8-bit, monitor, drive and printer; in order to do word processing - at a price much less than a word processor, and yet allowing him to do so much more!

As developers bail out of support for the 8-bit ATARI, it is refreshing to see new development (of any kind). Case in point, a press release provided by REEVE Software to our BBS, outlining Diamond (tm). It is printed in this issue.

'til next month...

IN THIS ISSUE ...

From the Desktop - L. Peckham.....	3
PDG-16 - L. Peckham.....	4
Exec. Comm. Minutes - R.P. Mulhearn..	6
Diamond (tm).....	6
Prog. ATARI BASIC #2, Cont. J. Beebe.	10
*My Uncle Jake - R. Golowach.....	11
*GIF is Here (8-bit) - N. Van Oost... ..	11
*Print Shop (tm) Handbook - D.Dvorin.	12
*Enhanced ST BASIC - J. Dean.....	12
*Textpro - M. Russomano.....	13

* = NEWSLETTER Contest Submission

CALENDAR OF EVENTS

AUGUST 5, 1988	Exec Board Meeting
AUGUST 13, 1988	JACG Monthly Meeting
SEPT. 10, 1988	JACG Monthly Meeting



ATARI®

ST

Computer System

68000 MICROPROCESSOR - 8 MHZ CLOCK - RS232 SERIAL PORT - PARALLEL PORT
 HARD DISK DRIVE PORT - CARTRIDGE PORT - SECOND FLOPPY DRIVE PORT - 192K ROM
 MIDI INTERFACE - TOS OPERATING SYSTEM - GEM DESKTOP - 512 COLORS
 MONOCHROME 640 X 400 RESOLUTION - COLOR 640 X 200 RESOLUTION

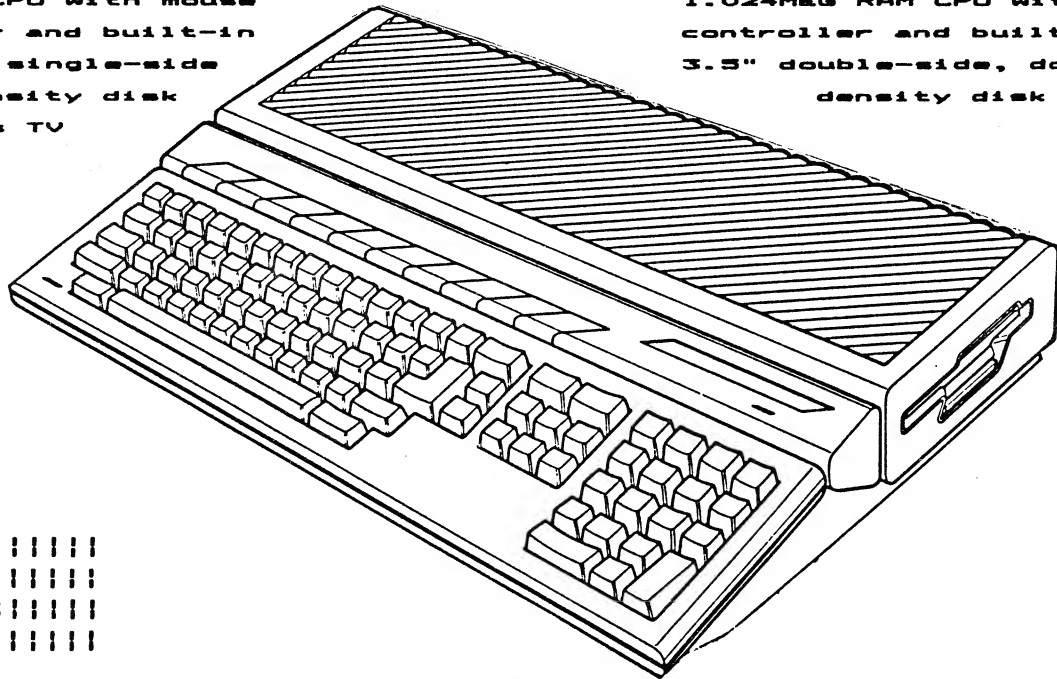
90-day Warranty - Over-the-Counter Exchange

520ST^{FM}.....\$ 549.95

512K RAM CPU with mouse
 controller and built-in
 360K-3.5" single-side
 double-density disk
 drive plus TV
 output

1040ST^F.....\$ 709.95

1.024MEG RAM CPU with mouse
 controller and built-in 720K
 3.5" double-side, double-
 density disk drive



|||||
MONO
SYSTEMS
 |||||

520ST^{FM} CPU with\$ 699.95
 ATARI 8M124 Hi-Res B&W Monitor

1040ST^F CPU with.....\$ 859.95
 ATARI 8M124 Hi-Res B&W Monitor

|||||
COLOR
SYSTEMS
 |||||

520ST^{FM} CPU with\$ 789.95
 MAGNAVOX CM8505 Med-Res RGB Color
 Monitor

1040ST^F CPU with.....\$ 949.95
 MAGNAVOX CM8505 Med-Res RGB Color
 Monitor

520ST^{FM} CPU with\$ 889.95
 ATARI 8C1224 Med-Res RGB Color
 Monitor

1040ST^F CPU with.....\$1049.95
 ATARI 8C1224 Med-Res RGB Color
 Monitor

|||||

GEMINI ENTERPRISES
 86 Ridgedale Avenue
 Cedar Knolls, NJ 07927

(201) 267-0988

FROM THE DESKTOP

By Linda Peckham



This month, broken STs, Wordup, and stuff for Publishing Partner.

Repairing Ataris

Alas, the poor 520! Almost three years old, carted around from city to city, taken apart and upgraded, and dropped a few times, my 520 ST seems to be suffering a chronic case of intermittent failures. The last two months, the failure mode has been the keyboard and mouse -- lots and lots of spurious key-clicks or mouse-button-presses. In trying to get the computer fixed, I ended up going to a service center in Dover. KBS Systems is recommended by the Software Station store in Rockaway Mall. They are not currently an Atari-authorized repair center, but are trying to get authorized for the ST line. In the meantime, they are set up to repair the following Atari equipment:

130XE

400

800

800XL

810 Disk Drive

1050 Disk Drive

520 ST (with RF Adapter, or bring in own monitor)

The address is:

KBS Systems, Inc.
105A Bassett Highway
Dover, NJ 07801
201-366-9787

They are open Monday through Saturday.

Glance at Wordup

I picked up Wordup a few weeks ago, to see what it was like. Wordup is one of the word processors that claim to be WSIWYG (What you see is what you get), with the ability to change fonts and include pictures. I haven't had much time to work with it, but I can make a couple of observations.

- * First, if you need multiple columns, forget Wordup. It doesn't have them -- not even two columns.

- * Pictures can be imported, and text does

automatically flow around them. The picture is sized originally by inches (to the thousandth of an inch, according to the dialog box). It can be resized using the mouse, but it is not possible to move the picture once it is in place.

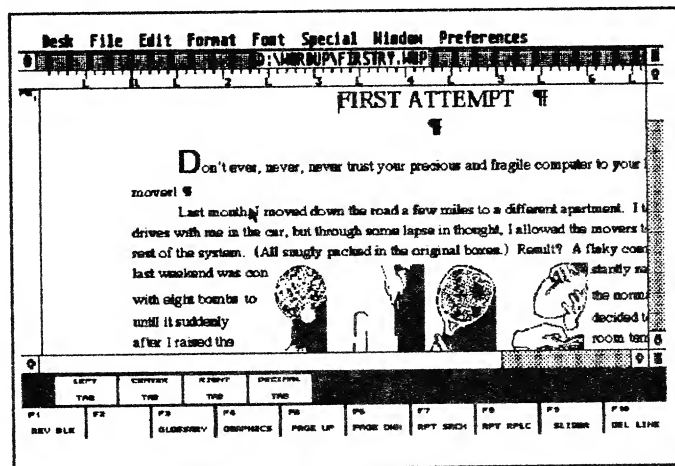


Figure 1. A screen shot of Wordup, showing different type sizes, and an imported picture.

Publishing Partner

More Publishing Partner Fonts are in the library this month, along with some more clipart. One of the fonts included is not Public Domain, but rather is a sample font, which can then be purchased. The font is not usable as it is -- unless one can write text without using the vowels a e i o u. Three of the new fonts are show below, in 15-points.

OFFBEAT: BCDFGHJKLMNPQRST V WX
YZ1234567890

ORIENTAL ABCDEFGHIJKLMNO
PQRSTUVWXYZabedefghijklmnopqr
stuvwxyz0123456789!%&^*()?

WILKES-BARRE--ABCDEFGHIJKLMN
OPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
1234567890!@#\$%^&*()-_=+~{
}?<>ùé•êô£äïöÿâÔÜëÀëâÜ\$



PDG-16

BY Linda Peckham

Disk of the Month

#107 Games Disk #12 Stocks and Bonds

The disk of the month is a simulation game called Stocks and Bonds. It runs in medium or high resolution, with one to four players. In this game, the objective is to make money by selling, buying, or holding onto stocks or bonds from different companies. During each "day", you can check your portfolio, check the current prices, look at the chart or table of recent stock prices, or read a brief description of one of the companies. At the end of the game, the computer will give you a rating, depending on how well you did. This game does not use graphics (except for the chart), but does include digitized sound.

New Disks

#108 Clip Art Disk #4. This disk contains clip art scanned by the Navarrone scanner. The images are in .TNY format, which may be used by Publishing Partner. The Tiny Stuff program is included, to convert the pictures to Degas, for use in the other desktop publishing packages. To use Tiny Stuff, copy the pictures you want to convert to another disk (or ram disk), along with the TinyStuff program. Make sure there is room on the disk for the uncompressed Degas pics (32K each). Run the program, and click on the appropriate boxes. The program will display each picture as it is converted. Note that TinyStuff will only convert images that are the same resolution as the program is currently running under. If you are using a color monitor, and want to convert the clip art to Degas format, then use PICSWITCH 0.7.

#109 Clip Art Disk #5. More scanned clip art. This artwork is from the GENie libraries, in the Soft Logik roundtable, which began just last month. If you are looking for Publishing Partner support, and have a modem, this is the place to go. (For a short-cut, once you are on GENie, type in "m 385" at a prompt.)

#110 Publishing Partner Disk #4: Fonts Public Domain Fonts. This disk is full of public domain fonts for Publishing Partner 1.0x. To use, copy the appropriate screen fonts (mono or color) to the disk or directory containing the screen fonts, and copy the printer fonts to the disk or directory containing the printer fonts.

UPDATES

#66 UTILITY DISK #3. Several programs on this disk are updated to the most recent version, including Superboot.

SUBMISSIONS

Submissions to the library should be made on singlesided disks when possible. 10-sector formats are acceptable, but extended track formats should be avoided. We prefer programs which will run on 512K systems, color or mono. Documentation is preferred, and any requirements should be clearly noted. **COPY-RIGHTED SOFTWARE WHICH IS EITHER NOT SHAREWARE, OR NOT OWNED BY THE SUBMITTER, WILL NOT BE ACCEPTED!**

DISK PRICES

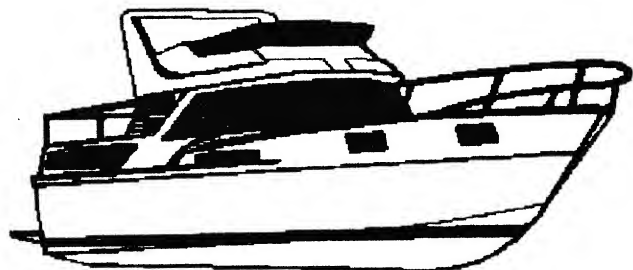
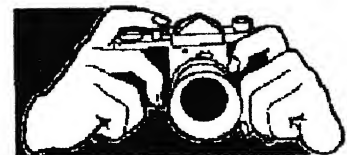
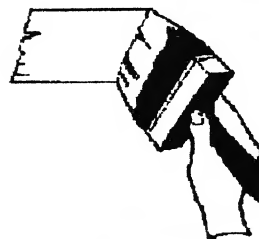
MEMBERS:

Disk of the Month	\$3.00
Regular Disk	\$4.00

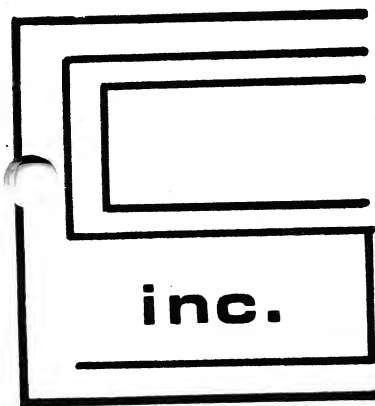
NON-MEMBERS:

All Disks	\$6.00
-----------	--------

Mail Order: Add \$1.00 per disk.



These are three images from the new clip-art disks. The top two are from a collection of "Hands", while the lower images is taken from the "Transportation" folder. This caption uses a new public domain font -- Wilkes Barre, at 10 Point. It is a "thin" font, that is, all parts of the type are the same width.

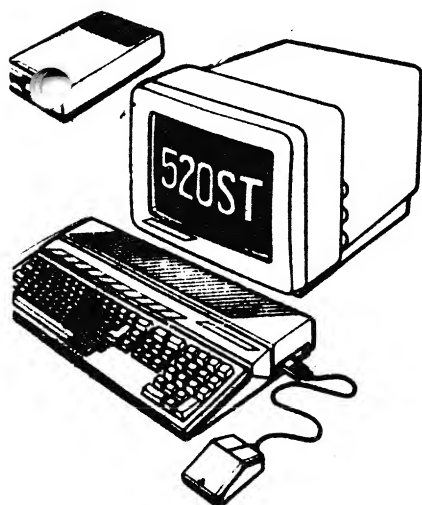


**COMPUTER SYSTEMS
CONSULTANTS, INC.**
Box 873, 897 U.S. RT. 130
Hightstown, N.J. 08520
(609) 448-8888/9

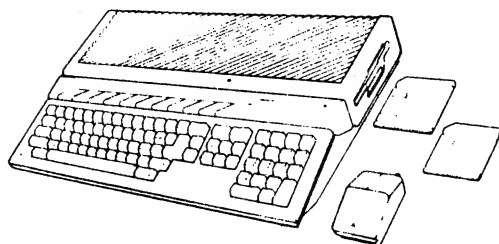
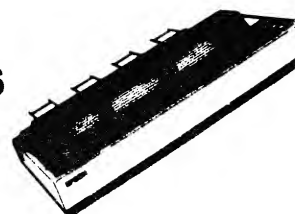
**BEFORE CALLING US, CALL AROUND
THEN CALL US FOR LOWEST PRICE!**

**We Are A Certified Atari/Epson
Service Center/Dealer**

Low Overhead = Low Prices



- **MEGA ST's**
- **520 ST color or mono**
- **1040 ST color or mono**
- **ALL EPSON Printers**
- **ST Software**
- **Peripherals**
- **Cables, etc.**



**visa-m/c
9 am - 5pm
mail orders**

R.P. Mulhearn - JACG

THE MEETING WAS CALLED TO ORDER AT 8:00 PM WITH DOUG VAN HOOK, LINDA PECKHAM, JOHN DEAN, SAM CORY, DAVE NOYES, BOB MULHEARN AND JACK RUTT PRESENT CONSTITUTING A QUORUM.

THE FIRST ORDER OF BUSINESS WAS THE RESIGNATION OF DOUG VAN HOOK AS PRESIDENT, TO BE EFFECTIVE FOLLOWING THE AUGUST MEETING. THE EXECUTIVE BOARD, AS PER THE BYLAWS, ELECTED LINDA PECKHAM TO FILL THE REMAINDER OF DOUG'S TERM, TO BE EFFECTIVE UPON THE DATE OF HIS RESIGNATION. PASSED WITHOUT DISSENT.

THE JUNE ATARI SAFARI WAS DISCUSSED NEXT. BOARD MEMBERS TO BRING EXTRA EXTENSION CORDS JUST IN CASE, AND DOUG TO CONTACT THE PRESENTERS TO MAKE SURE THAT THEY ARE SET WITH THEIR PRESENTATIONS.

THE FINAL ORDER OF BUSINESS WAS A DISCUSSION OF THE BUDGET AND CLUB FINANCES. IT WAS DECIDED TO MINIMIZE EXPENSES AS MUCH AS POSSIBLE, AS THE MEMBERSHIP COMES UP TO ITS MAJOR RENEWAL PERIOD. ALL DISK PRICES ARE TO INCREASE \$1.00, ACROSS THE BOARD, AS LOWERING THE PRICE HAS NOT SEEMED TO INCREASE SALES VOLUME. THE NEXT EXECUTIVE MEETING TO BE HELD IN AUGUST.

ATTENTION PROGRAMMERS:

SYNCSoft ANNOUNCES, THE SCREEN GENERATOR

CHECKBOOK		DATE
CHECK NUMBER	0000000000000000	
DESCRIPTION	0000000000000000	
CHECK AMOUNT	0000000000000000	
MARK FOR TAXES	0	CASHED? 0
DEPOSIT/WITHDRAWAL	0	
BEGINNING BALANCE		0000000000000000
MONTHLY DEBITS		0000000000000000
MONTHLY CREDITS		0000000000000000
NEW ENDING BALANCE		0000000000000000

SCREEN GENERATOR FEATURES:

DESIGN AND BUILD SIMPLE TO ELABORATE SCREENS TO BE USED IN BASIC PROGRAMS BY JUST TYPING ON THE SCREEN WHAT YOU WANT THEM TO LOOK LIKE, INCLUDING ALL OF THE ATARI GRAPHICS CHARACTERS.

DEFINE FIELDS ON THE SCREEN TO BE DISPLAY ONLY, ALPHA-NUMERIC ENTERABLE, OR NUMERIC-ONLY ENTERABLE (TRAPPING FOR DATA FORMAT ENTRY ERRORS IS NOW NOT NECESSARY).

THE SCREEN GENERATOR CREATES BASIC CODE FOR EACH SCREEN TO BE INCLUDED INTO YOUR PROGRAM.

RUN TIME SCREEN HANDLER FEATURES:

RUN TIME HANDLER PASSES ALL FIELDS TO AND FROM YOUR PROGRAM A FULL SCREEN AT A TIME.

ALL FIELDS ARE ASSIGNED A UNIQUE NAME ACCORDING TO THE RELATIVE LOCATION ON THE SCREEN THAT THEY ARE A PART OF.

CURSOR IS POSITIONAL AT ANY FIELD (ESPECIALLY USEFUL IN INDICATING A DATA ENTRY ERROR).

ESCAPE KEY WHEN PRESSED PASSES YOUR PROGRAM A FLAG WHICH MAY BE CHECKED TO ENABLE GOBACK LOGIC.

NO NEED TO CODE BASIC PRINT OR INPUT STATEMENTS.

RUNS WITH TURBO BASIC (INCLUDED AT NO ADDITIONAL CHARGE).

PROGRAM DEMO AND SCREEN EXAMPLE INCLUDED.

FOR THE ATARI XL/XE COMPUTER
TO ORDER: SEND \$11.95 TO SYNCSoft
P.O. BOX 5862
ALOHA, OR 97006

June 1988

Diamond(tm) Press Release Info

Attention Atari XL and XE owners.

REEVE Software, developers of the powerful News Station page layout software, will soon be releasing our powerful new graphics based operating system. It is called Diamond(tm) and when loaded into an XL/XE computer with 64K or more, gives your computer a complete graphics operating system similar to what GEOS(tm) has done for the Commodore 64. This document gives complete information on what Diamond(tm) can do from a programmers point of view, and I thin you'll agree that Atari XL/XE owners are in for a real treat this year.

Diamond(tm) is our powerful new graphics based operating system. It allows your Atari computer to use the icon based point-and-click menu systems that are present on many of the more powerful systems today such as the Macintosh(tm), Amiga(tm), and Atari ST(tm), and better yet, is the fact that Diamond(tm) is not a single program that uses drop-down menus and icons, but rather an environment which mean there will be many more programs to come that are Diamond(tm) based.

Diamond's(tm) features include: A mouse cursor which can be operated by the keyboard, a joystick, a touch tablet, or a mouse. It is definable in shape and its point of action can be changed (e.g. an arrows point of action would be its tip, and a crosshairs point of action would be its center. Drop-Down Menus that can have menu options activated and deactivated which is indicated by highlighting active items. Menu items can also have check marks placed and removed from them. These function are all handled by Diamond(tm). Desk Accessories which can be called up from any Diamond(tm) based program at any time. Icons that can be activated through a point-and-click system with a mouse. Icons can be shaped and moved all as part of our environment. Dialog Boxes that are virtually unlimited in design to allow the user to make easy selections that require anything from a simple yes/no response to anything one can think of. Windows that can be opened, closed, moved, and sized via simple software call....and many more powerful routines that make up the Diamond(tm) environment.

Most of what has been said up until now deals with Diamond(tm) as an environment, and is meant to let you know that Diamond(tm) is an environment that can easily be accessed by anyone that knows how to program, however, Diamond(tm) is intended to make computing more fun for those that do not know how to program, or even know how to use a computer. The primary purpose of an environment such as this is to make computing easy and enjoyable, and this is a user interface allowing people to communicate more easily with their computer. Diamond(tm) is scheduled for July release and includes our Diamond Desktop software, which acts as a substitute for those select a letter and command oriented systems. It allows users to perform every standard DOS function via a simple user

friendly command such as deleting a file by dragging the file over to the trash can, and the user doesn't have to use the keyboard unless absolutely necessary as in renaming a file. Diamond(tm) DeskTop will also be compatible with Floppy Drives, Hard Drives, and Ram Disks as well as most Disk Operating Systems such as Atari DOS 2.5 and SpartaDOS(tm). We hope that Diamond(tm) becomes the new standard of operating environments for Atari 8-bit owners as we have designed it with excellent flexibility and power. Diamond, which includes Diamond DeskTop and some additional programs and Desk Accessories, will retail for \$29.95 as will our other Diamond based products. Diamond should pump new life into your Atari 8-bit computer, and in order to put even more power into your XL/XE computer we have a complete line of Diamond(tm) based software such as:

- 1) The Diamond Programmers Kit - Explains how to program with Diamond(tm), and includes macros for Mac/65 and Basic source code to demonstrate how to use Diamond(tm). It also contains a resource builder to aid in the construction of drop-down menus, dialog boxes, and icons. It's what REEVE Software uses to develop our Diamond based programs. (August '88) \$29.95
- 2) Diamond Write - A full featured word processor that includes everything you come to expect from word processing on your Atari XL/XE and the ability to use multiple fonts and multiple text sizes in your documents. (August '88) Cost: \$29.95
- 3) Diamond Paint - A powerful paint program designed to allow you to paint fantastic art in an environment of drop-down menus and icons. (August '88) Cost: \$29.95
- 4) Diamond Publish - Finally, true desktop publishing for your XL/XE computer. Once your experienced Diamond Publish you won't give it up. Text flows from column to column, around pictures. Several fonts can be used in several different sizes. Multiple page documents in memory. (August '88) Cost: \$29.95
- 5) Diamond Draw - An object oriented drawing program so that images used in Diamond Publish will look smooth at any size. Draw squares, rectangles, circles, and use several different fill styles. (No release date set) Cost: \$29.95
- 6) Diamond Basic - A Basic language designed to take full advantage of the speed and power of Diamond(tm). (No release date set) Cost: \$29.95
- 7) Diamond Asm - A complete assembly language development system geared towards the Diamond environment. Allows for macros, conditional assembly, and more. (No release date set) Cost: \$29.95
- 8) Diamond C - A C language environment that will take complete advantage of Diamond's many powerful capabilities. (No release date set) Cost: \$29.95

For more information on Diamond(tm) or to place orders contact:

REEVE Software
29W150 Old Farm Lane
Warrenville, IL
60555

Call:

(312) 393-2317

INPUT STATEMENT:

The INPUT statement is a second way to get data into a program (the LET statement is the first). The INPUT statement stops a program, prints a question mark on the screen as a prompt, and waits for you to input from the keyboard and press RETURN.

For example.

```
10 PRINT "Please type in a number and press RETURN"
```

```
20 INPUT NUMBER
30 PRINT NUMBER
40 END
```

Line 10 is a PROMPT to let the user know what to type in. Line 20 takes in a number and puts it into a numeric variable named NUMBER. Line 30 prints it's value on the screen. Try this. Type NEW then enter the program. RUN it a few times while trying different numbers for input.

Try entering a letter instead of a number. The program crashes. To INPUT letters, you need to specify a string variable name in the INPUT statement.

For example:

```
10 DIM NAMES$(25)
20 PRINT "Enter your name and press
RETURN"
30 INPUT NAMES$
40 PRINT NAMES$
50 END
```

You can input ANYTHING into a string variable, but only numbers into numeric variables. When you press RETURN without pressing a letter, number or character first, that is called a null input, and can be tested for by checking for "" (nothing between the quotes.)

You can take in multiple pieces of data in the same INPUT statement, by separating variable names with commas.

```
10 DIM NAMES$(25)
20 PRINT "Type in name, age, weight"
30 INPUT NAMES$,AGE,WEIGHT
40 PRINT NAMES$
50 PRINT AGE
60 PRINT WEIGHT
70 END
```

Separate data items with commas, when typing them in. Type all three items, with commas before pressing RETURN. Even though this is POSSIBLE, I believe it is confusing to users, and believe it's much clearer programming to input one piece of data at a time.

INPUT statements should be preceded by PRINT statements cueing the user for what's expected. These PRINT statements are called prompts. Some other BASIC's allow putting a prompt right in the INPUT statement, but...Atari BASIC does not. No real problem.

BASIC running on microcomputers is a good environment for applications that are interactive with the user, and INPUT provides an easy way to accomplish that. INPUT statements are needed when your program performs a process on different data each time, like a program that converts Fahrenheit to Centigrade temperatures. While the program is running, it stops to ask for your input, then continues, using data you've furnished.

When I want a user to read a screen of text, then press RETURN to continue with the program, I simply dimension a variable B\$ early in the program as DIM B\$(1), then follow the text with a line like:

```
350 PRINT "      (RETURN)":INPUT B$:PRINT CHR$(125)
```

This allows the user to read at his/her own pace, then press RETURN which clears the screen and continues the program. B\$ is just a "dummy variable", used to bring in a null input. Again, CHR\$(125) clears the screen. Note the trailing semi-colon after the prompt, to keep the input question mark out on the end of the prompt line.

----- READ AND DATA STATEMENTS. -----

A third way to get data into a program is to put it in a DATA statement, and read it into the program with a READ statement. The format of the READ statement is READ followed by a variable name, or names separated by commas.

The format of the DATA statement is DATA followed by numbers, or letters in quotes, with individual pieces of data separated by commas.

For example:

```
10 READ A,B,C,D
20 PRINT A;" ";B;" ";C;" ";D
30 DATA 1,2,3,4
40 END
```

This program would print 1 2 3 4.
Here's mixed input:

```
10 DIM NAMES(20)
20 READ NAMES$,AGE,WEIGHT
30 PRINT NAMES;" ";AGE;" ";WEIGHT
40 DATA John Brown,25,165
50 END
```

Note that the program has to find string data when there's a string variable in the READ statement, and numeric to go with numeric variable, etc. or it crashes. No quotes are used in DATA strings.

When the program first encounters a READ statement, it goes to the first DATA statement (you may have many) and READs the first piece of data in it. BASIC sets a pointer to this data, and increments it one piece of data each time a READ statement is executed. Every time another READ is encountered, either in the same or in a later READ statements, it reads the next piece of DATA it finds. If there are multiple pieces of data in the first DATA statement, it will read them in order. When it runs out of data in one statement, it continues with the next DATA statement it finds. For every READ command you issue, the program must find data, or it crashes. Also note that the command READ A,B,C needs to find all three pieces of data, or...it crashes.

DATA statements may be placed anywhere in BASIC programs, but it is roughly a standard practice to place data at the end. If you follow this practice, a user can examine all the data easily, rather than having to scan the entire listing for scattered data.

----- RESTORE statement: -----

You may use data over again, by issuing the command RESTORE followed by the line number of a DATA statement. This resets the pointer to the first data item in that line.

For example:

```
10 REM * RESTORE demo *
20 FOR X = 1 to 25
30 READ NUM
40 PRINT NUM;" ";
50 IF X = 15 THEN RESTORE 100
60 NEXT X
100 DATA 1,2,3,4,5
110 DATA 6,7,8,9,10
120 DATA 11,12,13,14,15
200 END
```

This will produce output of:

```
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 1 2 3 4 5 6 7 8 9 10
```

This program READs data into, and PRINTs out a variable named NUM, 25 times. It begins reading data at the beginning of line 100, and reads lines 110 and 120 until X = 15. Line 50 then RESTORE's the pointer to the beginning of line 100 and it READs the first 10 numbers over again. If desired, we could have RESTORED to another DATA statement as line 120. More on FOR-NEXT and IF-THEN in later lessons.

The ideal application of READ-DATA statements is the program that routinely does calculations with different data each time, as payroll programs, or student grade programs. For programs that use a large amount of data, it is easier to enter and verify the accuracy of DATA statements than to type in data one piece at a time with INPUT statements. In the OLD DAYS we read data in from punched cards 80 columns wide. The modern day equivalent of the punch card is the DATA statement that has taken it's place.

For example:

```
10 REM * Student Grade Program *
20 DIM NAMES$(20)
30 READ NAMES$,GR1,GR2,GR3,GR4,GR5
40 AVEGR=(GR1+GR2+GR3+GR4+GR5)/5
50 PRINT NAMES$," "; "AVERAGE = " ; AVEGR
DATA SALLY SMART,95,91,89,98,97
70 END
```

END STATEMENT.

The END statement is required in some programs, and not in others. It is worth putting it at the end of all your programs, period. The END statement stops computation, shuts off any sound generators left on, and returns control to BASIC at the READY prompt. For now, put END on the last line of your program. Later we may tell the program to END if the Quit option is selected from a menu, etc.

END is the preferred way for a program to end, as opposed to ending from an error statement.

SAMPLE Programs:

Okay, now let's try some programming exercises that use these principles. We know enough now, to solve more complex problems.

PROBLEM 2

Write a program that adds, subtracts, multiplies, divides, and raises a number to a power, by putting two numbers in LET statements. Produce output EXACTLY like the following example. Don't use the numbers directly in the PRINT statements, but use variables. Be sure to allow room for minus signs.

Example:

The sum of 5 and 1 is 6.
The difference between 5 and 1 is 4.
The product of 5 and 1 is 5.
The quotient of 5 divided by 1 is 5.
5 raised to the 1 power is 5.

Run this program using the numbers -7 and 39.

PROBLEM 2A

Write a program that averages a student's grades, and prints out the name, and average. The formula for average is all grades added together, divided by the number of grades.

Format output like:

The average of the 7 grades for
John Doe is XX.XX.

Find the answer for the following data: (include this as a DATA statement in your program)

DATA Jane Jones,79,88,99,90,89,93,83

PROBLEM 2B

Write a program using INPUT statements that converts temperatures from Fahrenheit to Centigrade, as temperatures are input from the keyboard in Fahrenheit.

The formula is $C = (F-32)/5/9$

Format output as:

77 degrees F = 25 degrees C.
59 degrees F = 15 degrees C.

Find the conversions for:

- a) 14 F
- b) 69.8 F
- c) 260.6 F
- d) 4262 F
- e) -29 F

PROBLEM 2C

Write a program that converts hours into minutes using INPUT statements.

Format output as:

14.5 hours = 870 minutes

Convert the following data:

- a) 3.75 hours
- b) 99 hours
- c) 266 hours
- d) 0.3 hours
- e) 24 hours

PROBLEM 2D

Write a program using INPUT statements, that prints a number, it's square, and it's cube, as follows:

Number	Square	Cube
2	4	8

Run the program for the numbers:

- a) 14
- b) -6
- c) 0.033
- d) 123
- e) -0.88

This concludes lesson 2 of Learning to Program in Atari BASIC. Be sure to stay tuned for Lesson 3; which covers:

GOTO statement
FOR-NEXT statement
IF-THEN statement
ON-GOTO statement
LOOPING
COUNTERS
SUMMING

We will be able to really get into the nuts and bolts of programming with the addition of looping. Looping is perhaps the single most powerful feature of computers, that distinguishes them from calculators. We will also learn testing, which allows us to test, and branch to different parts of the program, depending on results.

PANORAMA OF PURE MATHEMATICS

Donald Forbes - JACG

What do research mathematicians do? They create for the future. They build the models that you and I and the applied mathematicians then use to solve real world problems.

Newton created his own mathematics (the calculus) to make a model of the universe. Einstein had his mathematics handed to him. He adapted it to expand the Newtonian vision of the world.

What do research mathematicians do today? Ask one of them, and he may say, "You don't know enough. You will not be able to understand."

You can then try to find out an answer for yourself: get a copy of a book called "A Panorama of Pure Mathematics" (Academic Press, 1982) by the retired French mathematician Jean Dieudonné.

The book is more than ten years old and, in his words, "an extremely sketchy survey" of what mathematicians are doing. The survey covers a large area of modern mathematics, and may serve as a guide to the literature for those who want to investigate further. The subject matter is not easy. If you are willing, however, to grapple with the topics, the book gives an enlightening view of the way they spend their time. You should know the fundamental facts at least beyond the calculus.

He points out that research mathematicians attempt to solve problems. Mathematical problems, like your problems and my problems, come in many shapes and sizes. They prefer to concentrate on those problems that beg for a method so that other and more difficult problems can be solved, as well as rare problems that reveal the existence of unsuspected underlying structures that provide powerful methods to tackle other problems.

Six areas today are basic, and of no research interest: set theory, general algebra, general topology, classical analysis, topological vector spaces, and integration.

These three areas (17 % of the book) are of slight research interest: categories and sheaves, spectral theory of operators, and commutative algebra.

Seven areas (21 % of the book) are of some interest: homological algebra, von Neumann algebras, groups (Lie and abstract), commutative harmonic analysis, mathematical logic, and probability theory.

Ten areas account of 62% of the book, in this order: geometry (analytic and algebraic), analysis (partial and ordinary differential equations, differential manifolds and differential geometry), theory of numbers, algebraic and differential topology, noncommutative harmonic analysis, automorphic and modular forms, and ergodic theory.

Have fun, just as I did!

My Uncle Jake as told to Ray Golowach

Back around 1920, after returning from his adventures with the Lafayette Esquadriille (Uncle Jake was the top Fighter Ace in WW I, but due to his modest nature gave the credit for all of his victories to the guy he taught to fly, Eddie Rickenbacher) Jake wandered around New Jersey doing odd jobs here and there. It was during this time that he met Thomas Edison.

Tom had great respect for Jake's achievements and wanted to help out by giving Jake a job. The only thing available at the time was sweep-up boy and Jake took it. He swept up all day and in the evenings, on his own time, tinkered around with all the gadgets and minor inventions that littered the Edison workshop.

The one that particularly fascinated Jake was the light bulb with the "extra wire". Many years prior Edison had added an extra wire to a light bulb and discovered that electricity could be forced to travel across the empty vacuum to this second element. He named it the Edison Effect and finding no practical use for it, promptly forgot about it.

One night, while experimenting on his own with variations of the Edison Effect, Jake discovered that by adding a wire screen between the filament and Edison's second element, the flow of electricity could be controlled. He could electrically turn it on and off like a switch. Jake knew Edison's attitude concerning "useless" discoveries and spent the next six weeks making and connecting hundreds of his "electric switches" until he felt that he had a "practical device" to show to Edison.

He called Tom into the back room to demonstrate his device. Jake sat before a typewriter and began to key in a series of commands that flowed through a rat's nest of wires, through bank after bank of glowing light-bulb-type "tubes" to a huge annunciator hanging from the back wall. As Jake typed in words and numbers, they appeared on the back wall. After writing several lines Jake typed the word "RUN" and the entire room began to vibrate as the "tubes" began to rapidly flash.

Many days later, after Jake's device had been dismantled (Jake himself had left the Edison Company to go to Egypt and teach his good friend Howard Carter the proper way to search for ancient tombs) a reporter from one of the local papers asked Edison what was being developed in the now empty back room. Edison's reply? "Some crazy guy wasted a lot of my equipment and money making a thing that he said would be a word processor, data base, and spreadsheet - whatever that means! I fired him. After all, how could I sell a machine that everyone thinks of as a toy and nobody is writing programs for?"



I, like you, was some what skeptical upon hearing Jake's story of how he invented a complete digital computer in 1920. That is until Jake showed me the tiny box containing the last remaining shard of glass from one of the tubes of that first machine. I now have that piece of glass and will be happy to show it to any "disbelievers" at the next JACG meeting.

GIF IS HERE FOR 8 BITS

Neil Van Oost Jr. - JACG

The latest addition on the Compuserve Atari 8 bit scene are two files in Library 4 (pictures and graphics) section. They are AT8GIF.DOC and AT8GIF.OBJ. The ATARI VIEW 8 program by Don Davis is a shareware product that decodes and views Graphics Interchange Format (GIF) images for all 8-bit Atari computers.

For those of you unfamiliar with the Graphics Interchange Format (GIF), it is a hardware-independent file format designed to allow different types of computers to exchange graphics information. Now as for what this means to you and me and our various 8-bit Atari's; you can now receive decode and convert to Micropainter format those really great Mac, ST and other 16 bit computer pictures.

There are over 4,000 picture files in the PICS section of Compuserve alone. A good portion of these are GIF encoded. Although all GIF files will not decode to a recognizable picture on your 8-bit Atari or even come close to ST picture quality, this program opens a window to a whole new world of picture files.

A little about the program, Atari View uses one of two display modes to present GIF images. They are either Graphics 8, 320 X 192 monochrome or Graphics 15, 160 X 192 X 4-color mode. The mode selected is contained in the image file header. The program has options to change horizontal and vertical display ratio's, select an area of the image to be enlarged and write a Micropainter file. More information on GIF files and Atari 8-bit decoding can be obtained from:

- 1) The AT8GIF.DOC file mentioned above,
- 2) The PICS section of Compuserve.
- 3) By contacting, Don Davis on CIS I.D.(72327,311).
- 4) By writing Don Davis,
50 W Holly HillRd.
Apt.13
Thomasville, NC 27360

GIF and 'Graphics Interchange Format' are registered trademarks of Compuserve, Inc. an H&R Block company.

A Review of
The Official Print Shop Handbook

David E. Dvorin - JACG

The purpose of this article is to present a review of The Official Print Shop Handbook authored by Randi Benton and Mary Schenck Balcer. This book shows how to get more out of The Print Shop and its family of software add-ins (this includes The Print Shop, Graphics Library 1, Graphics Library 2, Graphics Library 3, and The Print Shop Companion) regardless of what computer you are using. Although this alone does not qualify the book as "a must" for owners of The Print Shop, I believe its contents do.

The book is divided into four sections. The first section is a description about the book. In the description, it explains why the book was written, what information can be found, and the definitions of symbols used throughout the book. All in all, this section informs the reader how to get the most from the book.

The second section contains applications that can be created with The Print Shop, its family of software add-ins, and the handbook. The 100-plus applications are categorized by Home, Party, Learning Materials, School/Organization, and Professional. To make this section more valuable, the authors include the following information for each application:

- 1) What software is used
- 2) What steps are taken to create the application
- 3) Design notes about the application
- 4) Alternative ideas

The third section illustrates new and modified icons. Over 60 are presented. To make it easier to create them, they are presented on the same grid used in the Graphic Editor found on The Print Shop program disk. For modifying icons, the illustrations clearly mark which pixels are to be changed. Each illustration indicates the software needed, ideas for applications, and examples.

The last section presents the planning tools. It was with the use of these tools, the authors were able to generate the various icons and applications. The tools consist of templates showing the various icon sizes in the various configurations allowed by The Print Shop. Coupled with the various sizes of various fonts, the user is enabled to get an idea of how certain designs will look before they are printed to paper. Additional information with the tools include font and icon specifications, and the art grid used in the book and the Graphic Editor.

If one looks at this book strictly on the example applications and additional icons, it is worth the \$16.95. However, the authors' intention for this book is more than just what was printed on its pages. They wish the reader "find the ideas in this book useful - and inspiring." The real value of this handbook comes from the ideas the reader generates on his own. ➡

This almost 300 page paperback can be purchased for \$16.95 at most major book stores. If you use The Print Shop, (regardless of whether you have only The Print Shop or the entire family) The Official Print Shop Handbook by Randi Benton and Mary Schenck Balcer, is a must!

YOU MAY ALREADY OWN THE NEW ENHANCED ST BASIC!

By John H. Dean

If your ST BASIC disk has 123984 bytes in the BASIC.PRg file, and is dated 6/29/87 or later, it is probably an enhanced version. If your ST BASIC Sourcebook and Tutorial manual was copyrighted in 1986, it is out of date, but your disk may have 33 new reserved words that have been added to the original ST BASIC.

This is what happened. I bought my ST in October, 1987. With it came a ATARI U.S.A. Language Disk, and a slim (32 page) Quick Reference Guide. No Manual. On the back of the Guide, reference was made to "The new ST BASIC Sourcebook and Tutorial (C026220 Rev B)". The reference quoted suggested that I contact my Atari dealer and ask for it. Those I contacted knew nothing about it. Off goes a letter to Atari in Sunnyvale, with no response.

But wait! That's not all! In the MARCH/APRIL 1988 Explorer, there was an answer by the Editor to a letter complaining about Atari's lack of response to user's letters. The Editor referred to Atari's Customer Relation manager, Diana Goralczyk's promise to answer all letters. Off goes another letter! Guess what? ATARI CAME THROUGH!

Well, it was Ms. Goralczyk, probably, but in the return mail I received the new, enhanced ST BASIC floppy, dated 6/29/87, with exactly the same ST BASIC that I already had, but included was the new 322-page Sourcebook and Tutorial plus an exhaustive reference section for the advanced programmer.

New reserved words were included. These are:

AREA	GEM_ADDROUT	PATTERN
ASK MOUSE	GEM_CONTROL	PEEK_B
ASK RGB	GEM_GLOBAL	PEEK_L
BIOS	GEM_INTIN	PEEK_W
BOX	GEM_INTOUT	POKE_B
CLEAR	GEMDOS	POKE_L
DRAW	GSHAPE	POKE_W
DRAWMODE	LINEPAT	RGB
ED	MAT AREA	SSHAPE
ERR\$	MAT DRAW	STATUS
GEM_ADDRIN	MAT SOUND	XBIOS

A new syntax for for GEMSYS and VDISYS that works more efficiently than the old syntax has been introduced. The old syntax will still work with one addition: the number in parenthesis must be placed in in GEM_CONTROL(0) for GEMSYS or CONTROL(0) for VDISYS. Programs using VDISYS and GEMSYS should be modified to use the new syntax.

There are ST BASIC's out there dated 8/8/86. These apparently do not include the 33 new reserved words. The way that I checked out my original version was to DIM the new words, such as AREA, in command mode with the proper syntax. If nothing happens, you are out of luck - the word you used is not reserved. If you get "syntax error", you probably have the enhanced version. If you want a copy of ST BASIC Sourcebook and Tutorial C026220 Rev B, I suggest you write to:

Atari Customer Relations
P.O.Box 61657
Sunnyvale, CA 90488

Attn: Diana Goralczyk, Mgr.

News: This Article is For You
By Mary P. Russomano

Question: What technological advance has given birth to an essential tool for the serious student?

Answer: If you haven't guessed, let me remind you that it is the development of the computer chip and with that the streamlining of the personal computer and word processing.

"Why is that essential?" you protest. "My child never needed one before."

Your child needs a word processor for the following reasons:

1. The 20th century has pioneered all manner of machines (the car, the telephone, the refrigerator) which are now essential to the American family. The latest of these modern devices is the family computer. Today children must understand and feel some degree of comfort when working with the computers, or they will not be able to compete in tomorrow's job market. Computers are found in most businesses. We parents work to be sure that our children have all the advantages that we had and more. Owning a computer with

a word processor and successfully using it, represents an important advantage.

2. All children have assignments that require editing. Most children make mistakes and intensely dislike rewriting a composition or paper. A word processor allows your child to edit without the need for rewriting. You simply move paragraphs or sentences from one place to another. Or use your Delete key to erase an error crisply. No more white out or erasure filled papers. Just print a freshly edited copy.

3. Your child needs a computer with a word processor in order to do something easy, worthwhile and gratifying with computers. A child builds self-esteem by meeting challenges head-on, successfully. The challenge here is to use the word processor to his/her best advantage. It is a challenge easily met. If your child enjoys this type of program, he or she will be less hesitant to attempt other, more difficult programs in the future, especially those required in the world of business or social service.

4. A word processor is an easy program for Mother and child to learn together. Close relationships are nourished through a bond of common

interests. By placing yourself in the vulnerable position of student, you set an example that may encourage your child to accept other educational opportunities in the manner of his or her parents.

Ok, you are now convinced! "Where do I start?" you say. Well, you begin with an inexpensive word processor on the 8 bit Atari (400/800/800XL/130XE) your husband already owns. (I do not recommend something more sophisticated for an initial experience.) The JACG (Jersey AtariComputer Group) Disk library distributes a public domain word processor called TEXTPRO that is surprisingly flexible and simple enough to be used by children and adults from 1st grade through graduate school. The disk (146D) sells for \$3.00 and contains all of the directions (called documentation in computerese) on the disk. However, with this article and your JACG disk, you will not need to read any other directions unless you are curious and want to learn more. With TEXTPRO your child can write a term paper with footnotes. YOU can keep an up-to-date listing of everything in your deep freezer, or record the family recipes and print them on the occasion of your children's weddings. Or your children may record information about their baseball card or sticker collections.

TEXTPRO, version 1.2a with Extension 2.5e is easy to use. Let's begin at the beginning. Turn on your monitor (it looks like a TV) and your disk drive. Push the JACG disk into the disk drive (listen for the click and lock it in). Switch on your computer. The disk will automatically load. The JACG logo will appear first, then a menu of programs on the disk. Press the down arrow sign (a key on the right next to RETURN) and stop at AUTORUN.SYS. Press RETURN and the word processor will load automatically. (For brave souls, there is an easier way to load this program. Look for an explanation at the end of this article.)

Now press CTRL and "i" together. You are now in the REPLACE MODE, my



favorite mode. When you type over a letter, it is REPLACED by the new letter. The mode from which you just exited was the INSERT mode. You know you are in that mode when each letter that you type, pushes the word one space to the right to allow your letter to fit in.

If you press CTRL and "y" together, you will see a message: WORD WRAP OFF. That means when you type to the end of the right hand screen, the letters will stay where you type them. With WORD WRAP ON the entire word will wrap around to the next line so that your paper is easy to read as you are writing it.

You are now going to "format" your printed page with some SELECT commands. That means you will tell the printer where the left margin will be, the right margin, how much room you want to leave at the top, how long your paper is and anything else you wish. Your cursor is the blinking white box. It tells you where your next letter will be printed. With your cursor in the top left corner (home position), press SELECT and the letter "l." Type 3 next to "l" in the white box, (in computerese: the inverse "l"). The numbers that follow these commands are my favorite margins. You can choose your own. However, for practice, try mine. Soooo press SELECT and "r." Type 80 next to the inverse "r." Press SELECT and "t" and place a 5 next to that. Press SELECT and "b" and place a 58 next to that. Hit your RETURN key once. It will leave an EOL character - an arrow. That arrow represents RETURN. Your format line will look like this:

13r80t5b58 RETURN

The next thing you need to know is how to center your title. Press SELECT and "c," and type your title right next to the inverse "c" at the left margin. The printer will read this code and center the title on your printed page. Now press the RETURN key to indicate to the computer that this is the end of the title. Press RETURN 2 more times to

leave 2 blank lines. Your child can now begin his composition. It is important to know that you do not hit the RETURN key again until you have completed a paragraph. Press RETURN 1 more time for a blank line between paragraphs. When printed this will produce a single spaced copy with a blank line between

paragraphs.

That is all you really need to know to enjoy the use of this word processor. However, if you are adventurous and wish to become more informed about word processors, then read the following list of commands below and try them on your ATARI to see which ones you like.

May I suggest the use of CTRL and ? to see how many words your child has written, and the use of CTRL "u" to see how much memory you have left. I also strongly suggest that you save your work after every paragraph. Why? Because on occasion your child may accidentally hit a key that disables the program. In that case all his/her work will be totally lost. So when a paragraph is completed, even if it is not thoroughly edited, press CTRL and "s" and write the name with no spaces, 8 or less letters long. If you prefer a longer name, you may add a period and three more letters (also with no spaces.)

Don't be discouraged if some of these commands do not work the first time you try them. You may not have held all two or three keys down at the same time. Or you may be using ATARI DOS 2.0 or 2.5. Sparta DOS is the ideal environment for TEXTPRO. Or that particular command may relate to the loading of a Macro file. Or the program may be on the other side of your disk or on another disk. The best thing to do when you encounter a problem is to ask another JACG member (like your husband?). However, if you are willing to experience frustration trying to understand documentation written by computer hackers, then print the documentation using a DOS system disk with ATARI DOS 2.0, 2.5 or Sparta DOS.

[To print the documentation (I recommend you do not - until you have used TEXTPRO for a couple of months) turn on your printer. Place a disk, formatted with DOS (any disk that has DOS.SYS and DUP.SYS on it) in your disk drive and lock the disk inside. Turn on your computer. When you see the word READY, remove the DOS disk from your disk drive and insert your TEXTPRO disk. Type at the left margin: RUN"D:RUNME1ST and press RETURN. A program written by past president, Tom Pazel will load into your computer. Choose one of the print formats - to print to the screen or to the printer.

A list of documentation files should appear. Simply type the name of that file (exactly as it appears in front of you) at the left margin and hit RETURN. Voila. Your documentation will be printed. You may print all of the documentation or only the ones you are interested in. How do you determine this? Print them to the screen first and note which ones you wish a "ha copy of. Then press the BREAK key and type the word, RUN. This time, choose the printer option.]

Call our Bulletin Board
at (201)-298-0161

JACG MEMBERSHIP APPLICATION

DUES: US (inc. APO, FPO, etc.) 3rd Class mailing
First Class mailing of Newsletter, or
Foreign Subscriptions (US Currency)

\$25.00

\$30.00

MAIL TO: ROBERT P. MULHEARN
8 CRESCENT ROAD
PINEBROOK, NJ 07058

☐ RENEWAL ☐ NEW MEMBER ☐ FORMER MEMBER ☐ 8-BIT ☐ 16-BIT ☐ BOTH

NAME _____ MEMBER # _____

ADDRESS _____

CITY/STATE/COUNTRY _____ ZIP CODE _____

HOME PHONE NUMBER _____

DATE _____ 1ST CLASS MAIL _____ 3RD CLASS MAIL _____

NEW TO THE ATARI?

NEED A LITTLE HELP?



MAYBE A JACG BIG BROTHER CAN HELP!

GIVE US A CALL

201-469-6198

MEMBERSHIP RENEWAL

Take a moment and look at your mailing label on a recent issue of the JACG Newsletter. Check the upper right hand corner. This is the month/year when your membership expires. Try to renew at least one month early. This helps us keep our bookkeeping in order and avoids your missing any issues of the Newsletter.

There are two easy ways to renew:

1. Fill out a membership renewal form in the front lobby before our monthly meeting and present it with \$25 (in cash or check) to the Treasurer. Add \$6 for first class mailing of the Newsletter.

2. Copy the information on your mailing label and send, with your remittance to the address listed above.

CHECK YOUR LABEL TODAY!!!

NEWSLETTER ADVERTISEMENTS

RETAILERS - MANUFACTURERS - VENDORS

How would you like to reach a targeted audience of over 700 ATARI computer users? This newsletter has a press run of 800 per month, is read by members and non-members alike, and is sent to over 60 other ATARI User Groups across the U.S. and in several other countries.

Advertising is available on a first-come and space-available basis. Camera-ready copy, accompanied by payment, must reach the Editor by the 20th day of the month preceding publication. JACG reserves the right to make decisions concerning the placement of ads within the Newsletter and editing or rejecting advertisements deemed unsuitable.

ADVERTISING RATES

Full page (7-1/2 x 9) ...\$48.00
Half page\$25.00
Quarter page\$18.00



Discount rates available on request. Contact:

Gary Gorski
213 Sheridan Avenue
Roselle, NJ 07203

J A C G
JERSEY ATARI COMPUTER GROUP
8 CRESCENT ROAD
PINE BROOK, NEW JERSEY 07058

BULK RATE
U.S. POSTAGE
PAID
PINE BROOK, NJ
PERMIT # 56

COMPUTALK

2500

HELPMATE

(817)-595-0094

NO = 1702
JULY
JACG
NEWSLETTER

JACG NEWSLETTER - VOL. 8, NUM. 5

JULY 1988

JACG EXECUTIVE COMMITTEE

PRESIDENT

DOUG VAN HOOK
40 Meadow Lane
Clifton, NJ 07012
201-472-0637

TREASURER

JACK RUTT
52 Dacotah Avenue
Rockaway, NJ 07866
201-625-0273

LIBRARIAN

SAM CORY
P.O. Box 7
Towaco, NJ 07082
201-334-4443

DISK LIBRARIANS

Dave Green
Doug Van Hook
Bill Garmany, Jr.
Charles Miller (ST)
Linda Peckham (ST)
Eric Jacoves (ST)

VICE PRESIDENT, 8 BIT

JOHN H. DEAN
RFD #2 Box 788
Sussex, NJ 07461
201-827-3902

EDITOR

DAVID B. NOYES
3 Ann Road
Long Valley, NJ 07853
201-852-3165

PRESIDENT EMERITUS

THOMAS PAZEL
70 Mitchell Road. T-7
Hackettstown, NJ 07840
201-850-9017

BBS SYSOPS

Paul Machiavenna
Gary J. Gorski
Thomas Shoosmith

VICE PRESIDENT, 16 BIT

LINDA PECKHAM
111 Paterson Avenue Apt 1
Totowa, NJ 07502
201-790-3061

SECRETARY & MEMBERSHIP
ROBERT P. MULHEARN
8 Crescent Road
Pinebrook, NJ 07058
201-575-0067

MAIL ORDER LIBRARIAN

BILL GARMANY, JR.
13 Wellington
Livingston, NJ 07039

ADVERTISING & SALES

GARY J. GORSKI
313 Sheridan Avenue
Roselle, NJ 07203
201-241-4554

The Jersey Atari Computer Group (JACG) is an independent, informal organization of ATARI computer users. It is not affiliated with ATARI or any other commercial enterprise. Opinions expressed in this publication reflect only the views of the individual author, and do not necessarily represent the views of JACG. Material in this Newsletter may be reprinted by other Atari User Groups, provided the author (if applicable) and JACG are given credit. Only original work may be reprinted. Questions concerning reprinting should be addressed to the Editor.